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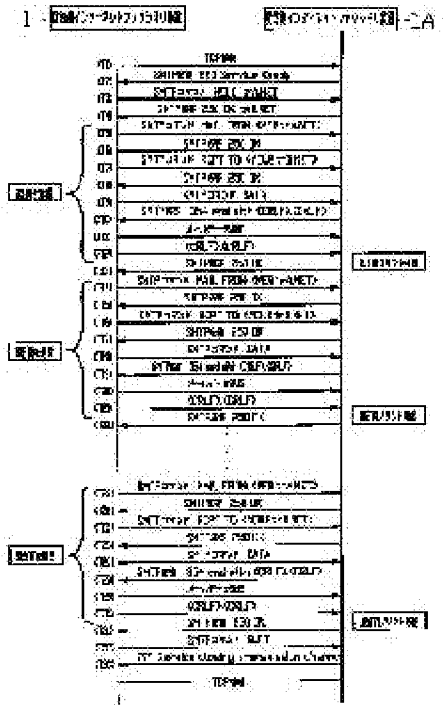
(54) INTERNET FACSIMILE COMMUNICATION METHOD AND INTERNET FACSIMILE APPARATUS

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an Internet facsimile communication method for shortening time from the time when an original to be transmitted starts to be read to the time when the image data of the original are received and the image data processing such as printing and distribution is completed at the reception side terminal in an Internet facsimile apparatus at a transmission side, and to provide the Internet facsimile apparatus.

SOLUTION: In the Internet facsimile communication method, the image data of the original to be transmitted are generated for each page of the original, and each image data generated for each page of the original are set to the attached file of each electronic mail for transmitting to the Internet facsimile apparatus having a mail server function in the session of one electronic mail transfer protocol.



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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the Internet facsimile apparatus which transmits and receives drawing data by E-mail, and the Internet facsimile correspondence procedure.
[0002]
[Description of the Prior Art] In recent years, the Internet facsimile apparatus which transmits and receives drawing data, such as a manuscript, with an electronic mail has spread. By this equipment, when a two or more pages manuscript is transmitted by E-mail, all the pages of the manuscript read from the manuscript read station are generated as one image file, and this image file of 1 is attached and transmitted to an electronic mail.
[0003]
[Problem(s) to be Solved by the Invention] However, in order to transmit or receive, when the attached file of this electronic mail has much amount of information, fixed time amount is required, a manuscript consists of 100,200 pages and there are many transmitting pages, it requires long duration. Moreover, it is necessary to perform division processing etc. for every page, and in the Internet facsimile apparatus of a receiving side, after receiving, the encoded attached file is decoded, and time amount is further required [it comes to complete processing of printing of the received drawing data, distribution etc.] until.
[0004] This invention is made in view of this technical problem, and in transmitting-side Internet facsimile apparatus, after reading of a manuscript which should transmit is started, it aims at offering the Internet facsimile correspondence procedure which shortens time amount until the drawing data of said manuscript are received in a receiving-side terminal and processing of printing distribution of drawing data etc. is completed, and the Internet facsimile apparatus.
[0005]
[Means for Solving the Problem] In order to attain the above-mentioned purpose, the Internet facsimile correspondence procedure according to claim 1 is characterized by transmitting each drawing data which generated the drawing data of the manuscript which should be transmitted for every page of a manuscript, and generated them for every page of a manuscript as an attached file of the electronic mail of 1, respectively.
[0006] Two or more electronic mails with which, as for the Internet facsimile correspondence procedure according to claim 2, the drawing data generated for every page of a manuscript in the Internet facsimile correspondence procedure according to claim 1 were attached are characterized by being transmitted to a transmission place mail server within the session of the electronic mail transfer protocol of 1.
[0007] The Internet facsimile correspondence procedure according to claim 3 is characterized by said transmission place mail server being not a junction mail server but the Internet facsimile apparatus equipped with mail server ability in the Internet facsimile correspondence procedure according to claim 2.
[0008] The Internet facsimile correspondence procedure according to claim 4 It is the transmission place

to which the transmission place of drawing data can transmit an electronic mail, without going via a junction mail server. And it judges whether it is the Internet facsimile apparatus equipped with mail server ability. When it is the transmission place which can transmit an electronic mail, without a transmission place going via a junction mail server and is the Internet facsimile apparatus equipped with mail server ability, Each drawing data which generated the drawing data of the manuscript which should be transmitted for every page of a manuscript, and generated them for every page of a manuscript is transmitted as an attached file of the electronic mail of 1, respectively. When it is not the Internet facsimile apparatus equipped with mail server ability when a transmission place was not a transmission place which can transmit an electronic mail, without going via a junction mail server, All the pages of a manuscript that should transmit are generated as an image file of 1, and it is characterized by transmitting this image file as an attached file of an electronic mail.

[0009] Moreover, within the session of the electronic mail transfer protocol of 1, when receiving two or more electronic mails, the Internet facsimile apparatus according to claim 5 is characterized by having a means to perform output processing, whenever it receives each electronic mail.

[0010] When receiving two or more electronic mails, whenever the Internet facsimile apparatus according to claim 6 receives each electronic mail within the session of the electronic mail transfer protocol of 1, it is characterized by having a means to answer a letter by E-mail in the reception result of each electronic mail.

[0011] Within the session of the electronic mail transfer protocol of 1, when receiving two or more electronic mails, the Internet facsimile apparatus according to claim 7 is characterized by having a means to summarize the reception result of all electronic mails and to answer a letter with the electronic mail of 1, after it receives all the electronic mails of these plurality.

[0012] The Internet facsimile apparatus according to claim 8 is characterized by having a means to generate the drawing data of the manuscript which should be transmitted for every page of a manuscript, and a means to transmit each drawing data generated for every page of a manuscript to a transmission place mail server within the session of the electronic mail transfer protocol of 1 as an attached file of the electronic mail of 1, respectively.

[0013] It is characterized by the Internet facsimile apparatus according to claim 9 being the Internet facsimile apparatus with which said transmission place mail server was equipped not with a junction mail server but with mail server ability in the Internet facsimile apparatus according to claim 8.

[0014] The Internet facsimile apparatus according to claim 10 A means to judge whether it is the Internet facsimile apparatus with which the transmission place of drawing data is a transmission place which can transmit an electronic mail, without going via a junction mail server, and was equipped with mail server ability, When it is the transmission place which can transmit an electronic mail, without a transmission place going via a junction mail server and is the Internet facsimile apparatus equipped with mail server ability, A means to transmit each drawing data which generated the drawing data of the manuscript which should be transmitted for every page of a manuscript, and generated them for every page of a manuscript as an attached file of the electronic mail of 1, respectively, When it is not the Internet facsimile apparatus equipped with mail server ability when a transmission place was not a transmission place which can transmit an electronic mail, without going via a junction mail server, All the pages of a manuscript that should transmit are generated as an image file of 1, and it is characterized by having a means to transmit this image file as an attached file of an electronic mail.

[0015]

[Embodiment of the Invention] The Internet facsimile apparatus which enforces the Internet facsimile correspondence procedure and this correspondence procedure concerning the gestalt of operation of the 1st of this invention hereafter is explained based on a drawing.

[0016] The concrete example of a configuration of said Internet facsimile apparatus 1 is shown in drawing 1 . Said Internet facsimile apparatus 1 is equipped with CPU (central processing unit)2, RAM (random access memory)3, ROM (read only memory)4, a codec 5, a modem 6, NCU (network control unit)7, a read station 8, the Records Department 9, a control unit 10, and LANI/F (Local Area Network interface)11, and each equipment 2 thru/or 11 are connected by the bus 12 possible [a communication

link].
[0017] Said CPU2 controls each equipment which constitutes this Internet facsimile apparatus 1 according to a predetermined program.
[0018] Said RAM3 functions as the storage sections, such as many data stored temporarily, as the storage section for memorizing drawing data, a FAX number, a mail address, etc. beforehand.
[0019] Said ROM4 has memorized various programs to control actuation of each part of this Internet facsimile apparatus 1 by said CPU2.
[0020] Said codecs 5 are coding (encoding) and a thing to decode (decoding) corresponding to two or more protocols. That is, the drawing data read by said read station 8 are encoded with MH, MR, a MMR method, etc. for transmission, and the received drawing data are decoded. Moreover, it can respond also to the TIFF (Tagged Image File Format) format which is the graphics format which is used by computer, and which is generally used, and can also encode and decode. In addition, the specification of TIFF is U.S. Adobe. It is opened to the public by System and two or more drawing data with which resolution differs from the color number can be stored in coincidence by data's being expressed by data block in a file using a tag, and using a tag as a name.
[0021] Said modem 6 performs the modulation and recovery of a transmitted and received data according to advice V.34 specification of ITU-T (International Telecommunications Union), or the same thing as this.
[0022] Said NCU7 is a line network control unit with which the telephone line is controlled, it telephones or a telephone is cut, and is connected to PSTN (Public Switched Telephone Networks)13.
[0023] Said read station 8 reads the image data of a manuscript, and outputs the drawing data changed into monochrome binary one.
[0024] Said Records Department 9 consists of a thing of for example, an electrophotography method, does image formation of the received drawing data in the record paper, and discharges this recording paper (print-out). For example, drawing data of a manuscript, drawing data which carried out facsimile reception, drawing data of the attached file which carried out the Internet facsimile reception, text data of the text, etc. which were read by said read station 8 are printed out with directions of said CPU2.
[0025] Said control unit 10 is equipped with cursor key 10e for moving the inverse video in start key 10d for performing initiation of compaction key 10c for sending from ten key 10b for inputting display 10a which displays the information and the various operator guidance screens about a condition of this Internet facsimile apparatus 1, a FAX number, etc., and an abbreviated number, and read actuation of a manuscript etc., and said display 10a etc., and various actuation is performed by this control unit 10.
[0026] Said LANI/F11 is equipped with the interface with LAN (Local Area Network)14, and has connected this LAN14 and the Internet facsimile apparatus 1 possible [a communication link].
[0027] Said Internet facsimile apparatus 1 is equipped with the function which carries out the facsimile transmission and reception of the drawing data, such as a manuscript, with G3 method etc., and also it is equipped with the Internet facsimile function which transmits and receives the drawing data with the text of an electronic mail by mounting TCP/IP (TransmissionControl Protocol/Internet Protocol) and making drawing data, such as a manuscript, into the attached file of an electronic mail. Furthermore, it also has a function as an SMTP (Simple Mail Transfer Protocol) server (if it puts in another way mail server), and other SMTP servers etc. and SMTP connection are established at least, it is on the connection, and the SMTP command and data can be transmitted and received. In addition, SMTP is an electronic mail transfer protocol generally used for the transfer of an electronic mail, and is a protocol defined as RFC (Request for Comments) 821 and 822.
[0028] Moreover, the data table 22 shown in drawing 6 is memorized in the predetermined storage region of RAM3 of said Internet facsimile apparatus 1. This data table 22 stores the information about a "phase hand name", the "destination", and a "attribute" in ** "an abbreviated number." When an abbreviated number "001" is specified as a transmission place, for example, said transmitting-side Internet facsimile apparatus 1 While specifying "YOU@tmB.NET" as a transmission place, the terminal of the transmission place The Internet facsimile apparatus with "SMTP server ability, It is the attribute information, i.e., the Internet facsimile apparatus equipped with SMTP server ability, that he has no

junction mail server." The information that it is possible to exchange an electronic mail in direct SMTP without going via a junction mail server on the occasion of transmission of the electronic mail to this equipment is also acquired to coincidence. It is PC which was shown in the "attribute" column of an abbreviated number "002" and with which "he has a mail client with SMTP server ability and no junction mail server" was equipped with SMTP server ability, and it is shown that it is possible to exchange an electronic mail in direct SMTP without going via a junction mail server on the occasion of transmission of the electronic mail to this equipment. "The mail client and those with a junction mail server" which were shown in the abbreviated number "003" or the "attribute" column of "005" are a mail server subordinate's mail client terminal, and show that it is transmitted via the mail server at least on the occasion of transmission of the electronic mail to this equipment. Although "the Internet facsimile apparatus with SMTP server ability and those with a junction mail server" which were shown in the "attribute" column of an abbreviated number "004" are the Internet facsimile apparatus equipped with SMTP server ability, they show that it goes via a junction mail server on the occasion of transmission of the electronic mail to this equipment.

[0029] The actuation in the case of transmitting the manuscript with which said Internet facsimile apparatus 1 is installed in network environment A shown in drawing 2 , and consists of two or more pages hereafter by E-mail, and actuation of other Internet facsimile apparatus 1A which receives this electronic mail are explained based on a flow chart and a sequence diagram. In addition, Internet facsimile apparatus 1A (henceforth "receiving-side Internet facsimile apparatus 1A") besides the above is equipped with the hardware configuration shown in drawing 1 , and the above mentioned SMTP server ability like said Internet facsimile apparatus 1 (henceforth "the transmitting-side Internet facsimile apparatus 1"). The SMTP session formed [actuation / of receiving-side Internet facsimile apparatus 1A] about actuation of the transmitting-side Internet facsimile apparatus 1 based on the sequence diagram of drawing 5 based on the flow chart of drawing 4 between the transmitting-side Internet facsimile apparatus 1 and receiving-side Internet facsimile apparatus 1A based on the flow chart of drawing 3 is explained. Here, various actuation explained based on a flow chart is performed according to the instruction which CPU2 publishes based on the control program memorized by each ROM4.

[0030] In network environment A shown in drawing 2 , said transmitting-side Internet facsimile apparatus 1 is connected to PC17 equipped with a mail server 15, a client PC 16, and SMTP server ability, said receiving-side Internet facsimile apparatus 1A, router 18 grade, and mutual possible [a communication link] through LAN14. Moreover, said transmitting-side Internet facsimile apparatus 1 can transmit and receive drawing data with the mail client PC 20 of the mail server 19 connected to other LAN14A through the Internet, and this mail server subordinate and other Internet facsimile apparatus 1B, and an electronic mail. Moreover, it is also possible to transmit and receive the drawing data of other G3FAX terminals 21 and G3 format through PSTN (Public Switched Telephone Networks) 13.

[0031] moreover, as the "destination" memorized by said data table 22 among the terminals shown in said network environment A Said receiving-side Internet facsimile apparatus 1A for example, to an abbreviated number "001" For one of said clients PC 16, Internet facsimile apparatus 1B besides the above shall be registered into an abbreviated number "004", and said mail client PC 20 shall be registered [said PC17] into the abbreviated number "002" by the abbreviated number "003" at the abbreviated number "005."

[0032] First, the manuscript which becomes said read station 8 from two or more pages is set, and if said compaction key 10c is pushed by the operator etc. in order to specify the transmitting destination, the transmitting-side Internet facsimile apparatus 1 will specify the transmitting destination assigned to the pushed abbreviated number by him based on said data table 22 (S1). Decision whether it is the transmission place which can transmit an electronic mail, and a judgment whether it is the Internet facsimile apparatus with which the transmission place was equipped with SMTP server ability are made based on said data table 22, without next, (S2) and a direct transmission place (communications partner) going via the transmit-end point, i.e., a junction mail server, when directions of transmitting initiation

are received by the start key 10d depression by an operator etc. (S3, S4).
[0033] For example, in said S1, when the abbreviated number "001" is specified The transmitting-side Internet facsimile apparatus 1 Based on said data table 22, "YOU@tmB.NET" is specified as the destination. "The "attribute" column The Internet facsimile apparatus with SMTP server ability, It judges noting that it is the transmission place which can transmit an electronic mail, without a transmission place going via a junction mail server from with no junction mail server" (S3). When it judges noting that the equipment of the transmission place is the Internet facsimile apparatus equipped with SMTP server ability, furthermore, (S4) and the transmitting-side Internet facsimile apparatus 1 Sequential transmission of the drawing data which read the manuscript which should be transmitted, generated drawing data for every page of a manuscript in the TIFF format in which electronic mail attachment is possible, and were generated for every page of a manuscript is carried out as an attached file of the electronic mail of 1 (S5). Thus, drawing data are generated one by one from the page of a reading ****** manuscript, and in order to attach and transmit to an electronic mail, after reading all the pages of a manuscript, compared with the case where the drawing data of all pages are transmitted by E-mail as an attached file of 1, the time amount from reading initiation of a manuscript to the completion of transmitting is shortened sharply.
[0034] On the other hand, in said S1, when the abbreviated number "002" is specified "123@def.co.jp" is specified as the destination. PC with "SMTP function of the "attribute" column, It judges noting that it is the transmission place which can transmit an electronic mail, without a transmission place going via a junction mail server from with no junction mail server" (S3), it judges noting that the equipment of the transmission place is not the Internet facsimile apparatus, and it shifts to (S4) and step 6 (S6). When an abbreviated number "003" is specified, "456@deg.co.jp" is specified as the destination, and it judges noting that a transmission place receives an electronic mail via a junction mail server from the "attribute" column "having a mail client and no junction mail server" (S3), and shifts to step 6 (S6). When an abbreviated number "004" is specified, it judges noting that a transmission place receives an electronic mail via a junction mail server from "the Internet facsimile apparatus with SMTP server ability and those with a junction mail server" of the "attribute" column (S3), and shifts to step 6 (S6). When an abbreviated number "005" is specified, it is the same as that of the case where an abbreviated number "003" is specified.
[0035] In said S6, the transmitting-side Internet facsimile apparatus 1 generates all the pages of a manuscript as a TIFF file of 1 which can be attached to an electronic mail, and transmits this TIFF file as an attached file of an electronic mail (S6).
[0036] Based on the sequence diagram showing the actuation in said S5 in case the transmitting-side Internet facsimile apparatus 1 transmits a manuscript to receiving-side Internet facsimile apparatus 1A in drawing 5 below, it explains further. The drawing data of all the pages of a manuscript are respectively transmitted with a separate electronic mail within the SMTP session of 1 after TCP connection is established until it is cut, as shown in this sequence diagram.
[0037] First, the transmitting-side Internet facsimile apparatus 1 requires TCP connection from receiving-side Internet facsimile apparatus 1A, the SMTP response code "220" which shows the purport which receiving-side Internet facsimile apparatus 1A consents that this is is returned, and TCP connection is established among these equipments 1 and 1A (T1, T2).
[0038] Next, the transmitting-side Internet facsimile apparatus 1 specifies self by the SMTP command "HELO tmA.NET" to receiving-side Internet facsimile apparatus 1A. In this case, "tmA.NET" which is a parameter is specified as a domain name of the transmitting-side Internet facsimile apparatus 1. On the other hand, receiving-side Internet facsimile apparatus 1A specifies as a parameter "tm.B.NET" which is an own domain name while returning an SMTP response code "250" (T3, T four). This SMTP response code "250" is a code in the response which shows the purport which processing of the demanded SMTP command completed.
[0039] Next, the transmitting-side Internet facsimile apparatus 1 By the SMTP command "MAIL FROM: <ME@tmA.NET>" While specifying an own mail address "ME@tmA.NET" (T5) After specifying an addressee (transmission place) by the SMTP command "RCPT TO:

<YOU@tmB.NET>" (T7), Transmission of the drawing data equivalent to the 1st page of the manuscript attached to the electronic mail by the SMTP command "DATA" is specified, and after receiving an SMTP response code "354 end with<CRLF>. <CRLF>", the drawing data is transmitted (T9 thru/or T11). And termination of transmission of the drawing data is specified by transmitting the line "<CRLF>. <CRLF>" ("CRLF" showing line feed.) only containing a period (T12). Furthermore, said actuation of T5 thru/or T13 is repeated, and the drawing data of each page are respectively attached and transmitted to a separate electronic mail until it results in the last page (T14 T21 and T23 thru/or T30 grade).

[0040] Thus, in receiving-side Internet facsimile apparatus 1A which receives the drawing data transmitted from the transmitting-side Internet facsimile apparatus 1, output processing, such as printing of the drawing data of the page which received after said time of reception of the drawing data of each page attached to each electronic mail being completed, T12 and T21, and T30 grade, is performed. [i.e.,] That is, said receiving-side Internet facsimile apparatus 1A generates immediately the print job of drawing data which received whenever it received drawing data (S11) (S12), and performs printing etc. one by one at the Records Department 9.

[0041] Thus, in order for said receiving-side Internet facsimile apparatus 1A to generate a print job one by one and to print it from the drawing data of the page which received, after receiving the drawing data of all the pages of a manuscript completely, as compared with the case where printing is started, the time amount from reception initiation to all the completion of page printing is shortened sharply. Moreover, it is not restricted only to printing processing that this advantage is acquired, but its same is said of other output processing. For example, if it is made to carry out a sequential transfer from the received drawing data when receiving-side Internet facsimile apparatus 1A performs transfer (distribution) processing instead of printing processing, the time amount from reception initiation to all the completion of a page transfer will be shortened sharply.

[0042] After it transmits all the electronic mails that said transmitting-side Internet facsimile apparatus 1 generated for every page of a manuscript and receiving-side Internet facsimile apparatus 1A receives these [all] Receiving-side Internet facsimile apparatus 1A when the print-out of all drawing data which received was completed When generating the print job of the drawing data of the last page and fixed time amount has passed since from, the transmitting-side Internet facsimile apparatus 1 is answered by E-mail in the processing result of the drawing data received from the transmitting-side Internet facsimile apparatus 1.

[0043] The actuation and the actuation already mentioned above of receiving-side Internet facsimile apparatus 1A at this time are summarized, and it explains based on the sequence diagram shown in the flow chart shown in drawing 4 , and drawing 7 . In addition, actuation (T1 thru/or T33) of the sequence diagram shown in drawing 7 is equivalent to actuation (T1 thru/or T33) of the sequence diagram shown in drawing 5 .

[0044] First, if the electronic mail with which the page [1st] drawing data with which receiving-side Internet facsimile apparatus 1A was attached to the electronic mail were attached is received (S11, T5, or T12), the print job of page [1st] drawing data which received will be generated (S12). Next, when other electronic mails are within the same SMTP session, said actuation of S11 and S12 is repeated similarly, and whenever it receives each electronic mail, the print job of the drawing data attached to the electronic mail is generated.

[0045] To the next, from the transmitting-side Internet facsimile apparatus 1 by receiving the SMTP command "QUIT" which specifies cutting of TCP connection It is judged that other electronic mails cannot be found within the same SMTP session (S13, T32). When it judges whether printing processing is completed next about all the pages of drawing data that received (S14) and printing processing is completed The electronic mail which described the contents of the printing processing result for every page in the electronic mail text etc. is generated (S15), and the transmitting-side Internet facsimile apparatus 1 is answered (S16, T38, or T45). When it considers as the information described by the electronic mail text etc. as contents of the printing processing result, for example, printing is completed normally, it is described as "Printing O.K." by the electronic mail text, and since the recording paper is a

piece, when it is not able to print, "It is the supplement waiting of a form because of a form piece" is described.
[0046] In said S14, when printing processing is not completed For example, after judging said S13, judge whether fixed time amount has passed (S17), and when shifting to said S14 when having not passed, and having passed For example, the electronic mail which described the error code etc. in the electronic mail text etc. is generated (S18), and the purport that answered the transmitting-side Internet facsimile apparatus 1 (S16, T34, or T46), and printing went wrong etc. is notified to the transmitting-side Internet facsimile apparatus 1.
[0047] The Internet facsimile apparatus which enforces the Internet facsimile correspondence procedure and this correspondence procedure concerning the gestalt of the 2nd operation hereafter is explained.
[0048] Transmitting-side Internet facsimile apparatus 1C and receiving-side Internet facsimile apparatus 1D concerning the gestalt of the 2nd operation are used being installed in network environment A shown in drawing 2 . That is, in network environment A explained with the gestalt of the 1st operation, receiving-side Internet facsimile apparatus 1D which transmitting-side Internet facsimile apparatus 1C concerning the gestalt of the 2nd operation is installed instead of said transmitting-side Internet facsimile apparatus 1, and starts the gestalt of operation of the 2nd ** is installed instead of said receiving-side Internet facsimile apparatus 1A.
[0049] Said transmitting-side Internet facsimile apparatus 1C and said receiving-side Internet facsimile apparatus 1D have the same hardware configuration as the transmitting-side Internet facsimile apparatus 1 concerning the gestalt of the 1st operation shown in drawing 1 . Moreover, said transmitting-side Internet facsimile apparatus 1C as well as said transmitting-side Internet facsimile apparatus 1 has memorized said data table 22 to RAM3.
[0050] Hereafter, actuation in case transmitting-side Internet facsimile apparatus 1C transmits two or more manuscripts, and actuation of receiving-side Internet facsimile apparatus 1D which receives this are explained based on a flow chart and a sequence diagram. here, based on the flow chart shown in drawing 8 , actuation of transmitting-side Internet facsimile apparatus 1C is boiled and attached, and the SMTP session made about actuation of receiving-side Internet facsimile apparatus 1D based on the sequence diagram shown in drawing 9 between these transmitting-sides Internet facsimile apparatus 1C and receiving-side Internet facsimile apparatus 1D is explained based on the flow chart shown in drawing 10 . In addition, various actuation explained based on a flow chart is performed according to the instruction which CPU2 publishes based on the control program memorized by each ROM4.
[0051] In actuation of the transmitting-side Internet facsimile apparatus 1 concerning the gestalt of the 1st operation which showed the actuation which transmitting-side Internet facsimile apparatus 1C performs to drawing 3 , in in addition (S1 thru/or S4, S6), the actuation in said S5 differs, and actuation is performed similarly. Namely, transmitting-side Internet facsimile apparatus 1C A manuscript will be read if a transmission place judges that it is said receiving-side Internet facsimile apparatus 1D equipped with SMTP server ability through actuation of said S1 thru/or S4 based on the attribute information on said data table 22. Generate the page [1st] drawing data of a manuscript and it transmits to receiving-side Internet facsimile apparatus 1D as an attached file of an electronic mail (S26, T105, or T112). After receiving an SMTP response "250", the SMTP command "TURN" which replaces a transmitting side and a receiving side is transmitted (S27, T114), and a transmission right moves from transmitting-side Internet facsimile apparatus 1C to receiving-side Internet facsimile apparatus 1D. In addition, the SMTP command which the SMTP command "ETRN" besides "TURN" is sufficient as, and plays the same role as the "TURN" command may be defined and used for the SMTP command which makes a transmission right change in this way.
[0052] On the other hand, receiving-side Internet facsimile apparatus 1D receives the electronic mail with which the page [1st] drawing data transmitted in said S26 were attached (S41), and generates this print job about the drawing data of an electronic mail that received immediately (S42). And if the SMTP command "TURN" described above from transmitting-side Internet facsimile apparatus 1C is received (S43, T114), the electronic mail which described the contents of the processing result of the received drawing data will be generated (S44), said Internet facsimile apparatus 1C will be answered (S45, T119,

or T126), and the SMTP command "TURN" will be further transmitted to transmitting-side Internet facsimile apparatus 1C (S46, T128).
[0053] Then, when the SMTP command "QUIT" is received from transmitting-side Internet facsimile apparatus 1C, actuation is ended, and when not receiving, said actuation of S41 thru/or S47 is repeated until it receives the SMTP command "QUIT." That is, whenever it receives an electronic mail, sequential generating of the print job of the drawing data attached to the electronic mail is carried out, and printing processing of the received drawing data is performed until transmitting-side Internet facsimile apparatus 1C transmits the drawing data of all pages.
[0054] If transmitting-side Internet facsimile apparatus 1C receives the electronic mail with which the processing result of drawing data was described from said receiving-side Internet facsimile apparatus 1D (S28), it will print the contents described by the text of the received electronic mail etc. at the Records Department 9, or will display the contents on display 10a etc. (S29).
[0055] Transmitting-side Internet facsimile apparatus 1C If the SMTP command "TURN" transmitted from receiving-side Internet facsimile apparatus 1D in said S46 is received (S30) Judge whether the non-transmitted page remains (S31), and when remaining Said actuation of S26 thru/or S31 is repeated until it transmits all electronic mails, when it is judged that there is no non-transmitted page in said S31, the above mentioned SMTP command "QUIT" is transmitted and TCP cutting is performed (S32, T147).

[0056] The Internet facsimile apparatus which enforces the Internet facsimile correspondence procedure and this correspondence procedure concerning the gestalt of the 3rd operation hereafter is explained.
[0057] Transmitting-side Internet facsimile apparatus 1E concerning the gestalt of the 3rd operation and receiving-side Internet facsimile apparatus 1F are used being installed in network environment A shown in drawing 2 . That is, in network environment A explained with the gestalt of the 1st operation, receiving-side Internet facsimile apparatus 1F which transmitting-side Internet facsimile apparatus 1E concerning the gestalt of the 3rd operation is installed instead of said transmitting-side Internet facsimile apparatus 1, and start the gestalt of operation of the 3rd ** are installed instead of said receiving-side Internet facsimile apparatus 1A.
[0058] Said transmitting-side Internet facsimile apparatus 1E and said receiving-side Internet facsimile apparatus 1F have the same hardware configuration as the transmitting-side Internet facsimile apparatus 1 concerning the gestalt of the 1st operation shown in drawing 1 . Moreover, said transmitting-side Internet facsimile apparatus 1E as well as said transmitting-side Internet facsimile apparatus 1 has memorized said data table 22 to RAM3.
[0059] Hereafter, when transmitting-side Internet facsimile apparatus 1E transmits two or more manuscripts, actuation in case receiving-side Internet facsimile apparatus 1F receive this is explained based on a flow chart and a sequence diagram. Here, based on the flow chart shown in drawing 11 , the SMTP session made [actuation / of receiving-side Internet facsimile apparatus 1F] about actuation of transmitting-side Internet facsimile apparatus 1E based on the sequence diagram shown in drawing 13 based on the flow chart shown in drawing 12 between these transmitting-sides Internet facsimile apparatus 1E and receiving-side Internet facsimile apparatus 1F is explained. In addition, various actuation explained based on a flow chart is performed according to the instruction which CPU2 publishes based on the control program memorized by each ROM4.
[0060] In actuation of the Internet facsimile apparatus 1 concerning the gestalt of the 1st operation which showed the actuation which transmitting-side Internet facsimile apparatus 1E performs to drawing 3 , after said S5, predetermined actuation is added by in addition (S1 thru/or S6), and actuation is performed similarly. Namely, transmitting-side Internet facsimile apparatus 1E If a transmission place judges that it is said receiving-side Internet facsimile apparatus 1F [equipped with SMTP server ability] through actuation of said S1 thru/or S4 based on the attribute information on said data table 22 Sequential transmission is carried out as an attached file of the electronic mail of 1 for every page, generating drawing data for every page of a manuscript. After transmitting about all pages (S5, T201, or T231), the SMTP command "TURN" is transmitted (S51, T232), and the transmission right of transmitting-side Internet facsimile apparatus 1E is made to shift to receiving-side Internet facsimile

apparatus 1F.
[0061] On the other hand, receiving-side Internet facsimile apparatus 1F All of the electronic mail of all pages are received from transmitting-side Internet facsimile apparatus 1E (S61). If the SMTP command "TURN" transmitted from the transmitting-side Internet facsimile apparatus 1 in said S51 is received (S62, T232) The electronic mail which described the contents of the processing result of the received drawing data is generated (S63). Transmitting-side Internet facsimile apparatus 1E is answered by E-mail (S64, T237, or T244), finally the SMTP command "QUIT" is transmitted (S65, T246), and TCP cutting is performed.
[0062] If the electronic mail with which the reception result of drawing data was described from receiving-side Internet facsimile apparatus 1F in said S64 is received (S52, T235, or T244), transmitting-side Internet facsimile apparatus 1E will print the contents described by the text of the received electronic mail etc. at the Records Department 9, or will display the contents on display 10a etc. (S53).
[0063]
[Effect of the Invention] Since the Internet facsimile correspondence procedure according to claim 1 transmits each drawing data which generated the drawing data of the manuscript which should be transmitted for every page of a manuscript, and generated them for every page of a manuscript as an attached file of the electronic mail of 1, respectively, according to this correspondence procedure, it can shorten sharply time amount until transmission of the drawing data about all pages is completed from initiation of manuscript reading.
[0064] Since it is transmitted to a transmission place mail server within the session of the electronic mail transfer protocol of 1, two or more electronic mails with which, as for the Internet facsimile correspondence procedure according to claim 2, the drawing data generated for every page of a manuscript in the Internet facsimile correspondence procedure according to claim 1 were attached can aim at improvement in communication link effectiveness.
[0065] In the Internet facsimile correspondence procedure according to claim 2, since said transmission place mail server is not a junction mail server but the Internet facsimile apparatus equipped with mail server ability, the Internet facsimile correspondence procedure according to claim 3 can acquire information, such as a processing result of the drawing data received within the session of the same electronic mail transfer protocol as transmission of the electronic mail which attached drawing data, from the Internet facsimile apparatus.
[0066] The Internet facsimile correspondence procedure according to claim 4 It is the transmission place to which the transmission place of drawing data can transmit an electronic mail, without going via a junction mail server. And it judges whether it is the Internet facsimile apparatus equipped with mail server ability. When it is the transmission place which can transmit an electronic mail, without a transmission place going via a junction mail server and is the Internet facsimile apparatus equipped with mail server ability, Each drawing data which generated the drawing data of the manuscript which should be transmitted for every page of a manuscript, and generated them for every page of a manuscript is transmitted as an attached file of the electronic mail of 1, respectively. When it is not the Internet facsimile apparatus equipped with mail server ability when a transmission place was not a transmission place which can transmit an electronic mail, without going via a junction mail server, Since all the pages of a manuscript that should transmit are generated as an image file of 1 and this image file is transmitted as an attached file of an electronic mail, an electronic mail can be transmitted in a suitable communication link format to the above mentioned various transmission places.
[0067] Within the session of the electronic mail transfer protocol of 1, since the Internet facsimile apparatus according to claim 5 is equipped with a means to perform output processing whenever it receives each electronic mail when receiving two or more electronic mails, it can shorten sharply time amount after receiving the first electronic mail until it completes output processing of the last electronic mail.
[0068] Since the Internet facsimile apparatus according to claim 6 is equipped with a means to answer a letter by E-mail in the reception result of each electronic mail, within the session of the electronic mail

transfer protocol of 1 whenever it receives each electronic mail when receiving two or more electronic mails, it can shorten sharply time amount after receiving the first electronic mail until it answers a letter in the reception result of the last electronic mail.

[0069] Within the session of the electronic mail transfer protocol of 1, since the Internet facsimile apparatus according to claim 7 is equipped with a means to summarize the reception result of all electronic mails and to answer a letter with the electronic mail of 1 after it receives all the electronic mails of these plurality when receiving two or more electronic mails, as compared with the case where a letter is answered in a reception result, its communication link effectiveness improves separately.

[0070] According to the Internet facsimile apparatus according to claim 8, the same effectiveness as the Internet facsimile correspondence procedure according to claim 2 is acquired.

[0071] According to the Internet facsimile apparatus according to claim 9, the same effectiveness as the Internet facsimile correspondence procedure according to claim 3 is acquired.

[0072] According to the Internet facsimile apparatus according to claim 10, the same effectiveness as the Internet facsimile correspondence procedure according to claim 4 is acquired.

[Translation done.]

* NOTICES *

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1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1] The Internet facsimile correspondence procedure characterized by transmitting each drawing data which generated the drawing data of the manuscript which should be transmitted for every page of a manuscript, and generated them for every page of a manuscript as an attached file of the electronic mail of 1, respectively.
[Claim 2] Two or more electronic mails with which the drawing data generated for every page of a manuscript were attached in the Internet facsimile correspondence procedure according to claim 1 are the Internet facsimile correspondence procedures characterized by being transmitted to a transmission place mail server within the session of the electronic mail transfer protocol of 1.
[Claim 3] The Internet facsimile correspondence procedure characterized by being the Internet facsimile apparatus with which said transmission place mail server was equipped not with a junction mail server but with mail server ability in the Internet facsimile correspondence procedure according to claim 2.
[Claim 4] It is the transmission place to which the transmission place of drawing data can transmit an electronic mail, without going via a junction mail server. And it judges whether it is the Internet facsimile apparatus equipped with mail server ability. When it is the transmission place which can transmit an electronic mail, without a transmission place going via a junction mail server and is the Internet facsimile apparatus equipped with mail server ability, Each drawing data which generated the drawing data of the manuscript which should be transmitted for every page of a manuscript, and generated them for every page of a manuscript is transmitted as an attached file of the electronic mail of 1, respectively. When it is not the Internet facsimile apparatus equipped with mail server ability when a transmission place was not a transmission place which can transmit an electronic mail, without going via a junction mail server, The Internet facsimile correspondence procedure characterized by generating all the pages of a manuscript that should transmit as an image file of 1, and transmitting this image file as an attached file of an electronic mail.
[Claim 5] It is the Internet facsimile apparatus characterized by having a means to perform output processing whenever it receives each electronic mail within the session of the electronic mail transfer protocol of 1 when receiving two or more electronic mails.
[Claim 6] It is the Internet facsimile apparatus characterized by having a means to answer a letter by E-mail in the reception result of each electronic mail whenever it received each electronic mail within the session of the electronic mail transfer protocol of 1, when two or more electronic mails were received.
[Claim 7] It is the Internet facsimile apparatus characterized by having a means to summarize the reception result of all electronic mails and to answer a letter with the electronic mail of 1 after receiving all the electronic mails of these plurality within the session of the electronic mail transfer protocol of 1, when two or more electronic mails are received.
[Claim 8] Internet facsimile apparatus characterized by having a means to generate the drawing data of the manuscript which should be transmitted for every page of a manuscript, and a means to transmit each drawing data generated for every page of a manuscript to a transmission place mail server within the session of the electronic mail transfer protocol of 1 as an attached file of the electronic mail of 1,

respectively.
[Claim 9] It is the Internet facsimile apparatus characterized by being the Internet facsimile apparatus with which said transmission place mail server was equipped not with a junction mail server but with mail server ability in the Internet facsimile apparatus according to claim 8.
[Claim 10] A means to judge whether it is the Internet facsimile apparatus with which the transmission place of drawing data is a transmission place which can transmit an electronic mail, without going via a junction mail server, and was equipped with mail server ability, When it is the transmission place which can transmit an electronic mail, without a transmission place going via a junction mail server and is the Internet facsimile apparatus equipped with mail server ability, A means to transmit each drawing data which generated the drawing data of the manuscript which should be transmitted for every page of a manuscript, and generated them for every page of a manuscript as an attached file of the electronic mail of 1, respectively, When it is not the Internet facsimile apparatus equipped with mail server ability when a transmission place was not a transmission place which can transmit an electronic mail, without going via a junction mail server, Internet facsimile apparatus characterized by having a means to generate all the pages of a manuscript that should transmit as an image file of 1, and to transmit this image file as an attached file of an electronic mail.

[Translation done.]

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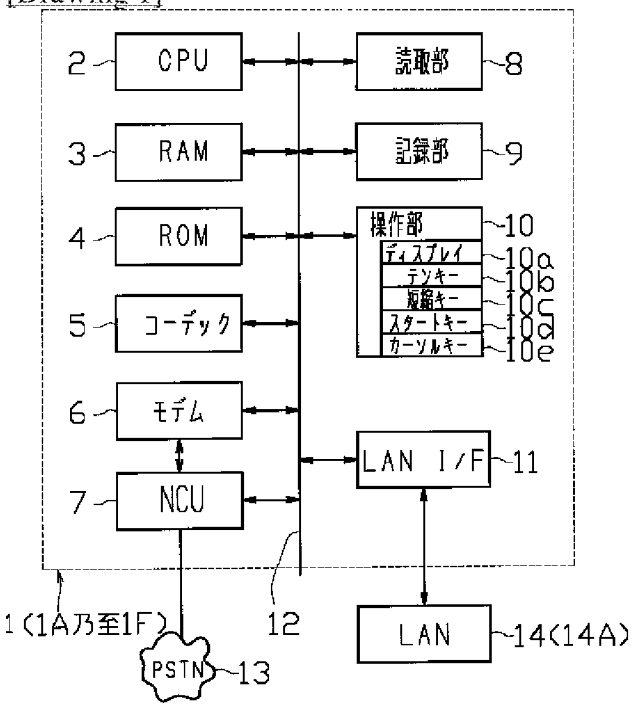
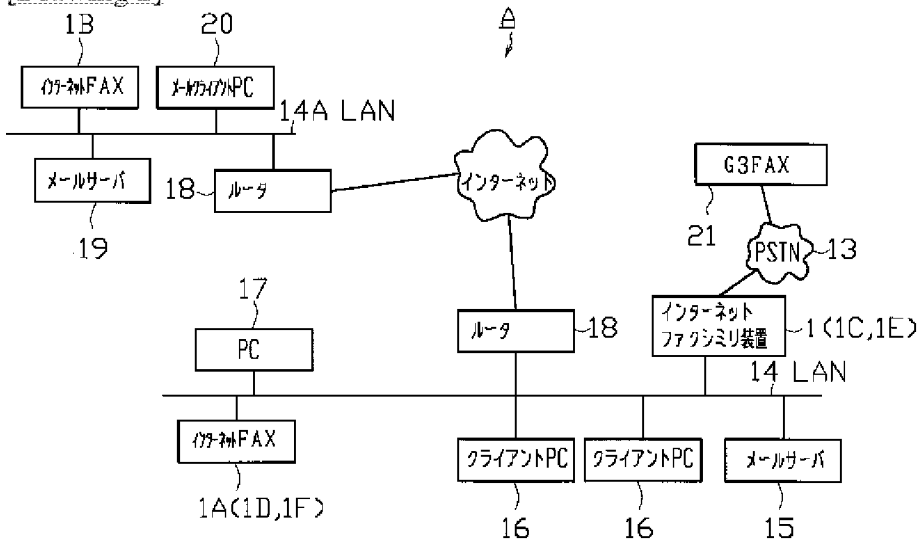
3.In the drawings, any words are not translated.

DRAWINGS

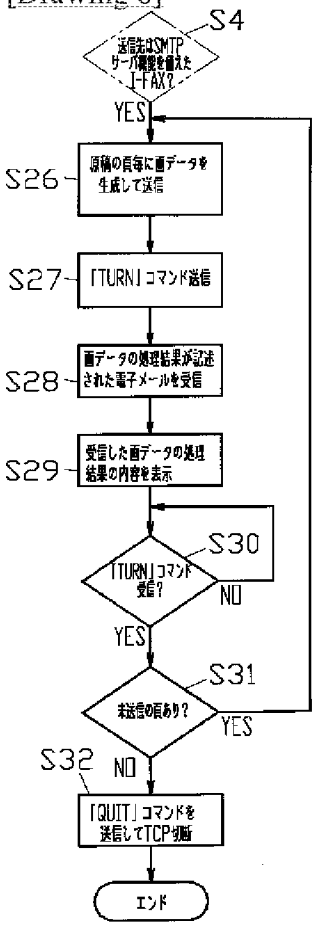
[Drawing 1]



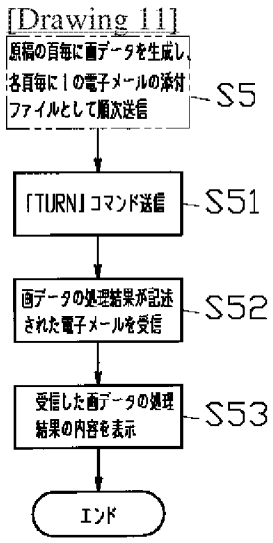
[Drawing 2]



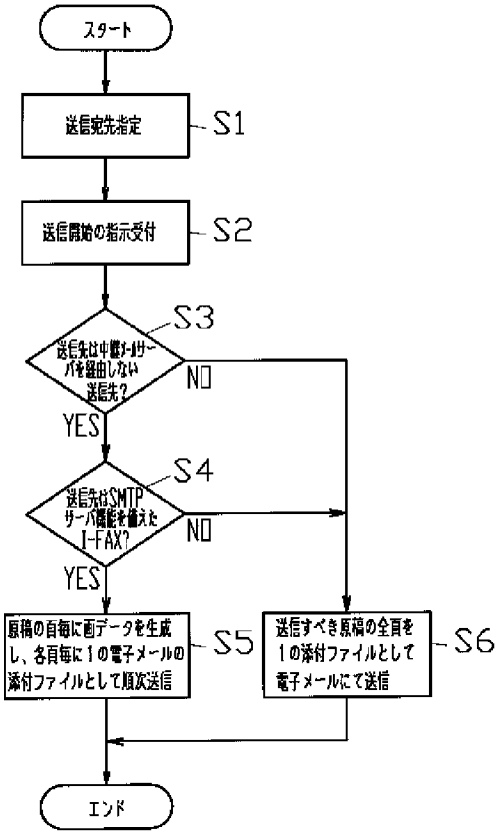
[Drawing 8]



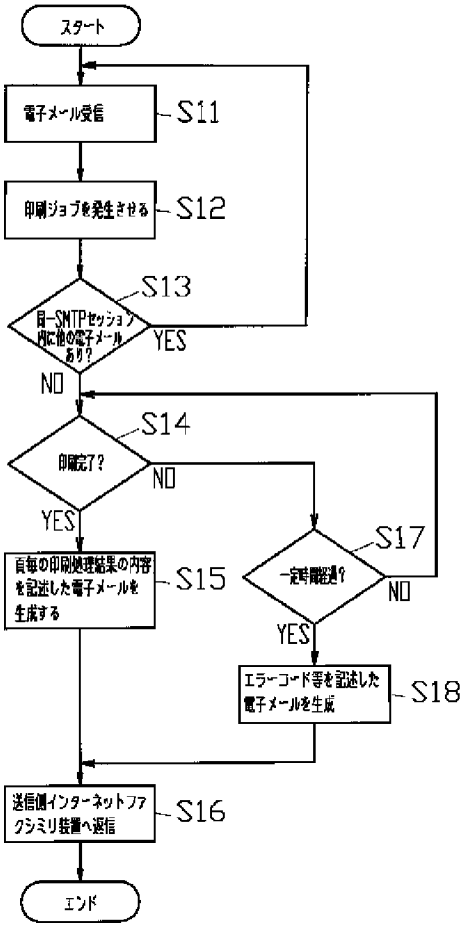
[Drawing 11]



[Drawing 3]


スタート
送信宛先指定
S1
送信開始の指示受付
S2
S3
送信先は中継メールサーバを経由しない送信先?
NO
YES
S4
送信先はSMTPサーバ機能を備えたI-FAX?
NO
YES
原稿の頁毎に画データを生成し、各頁毎に1の電子メールの添付ファイルとして順次送信
S5
送信すべき原稿の全頁を1の添付ファイルとして電子メールにて送信
S6
エンド

[Drawing 4]

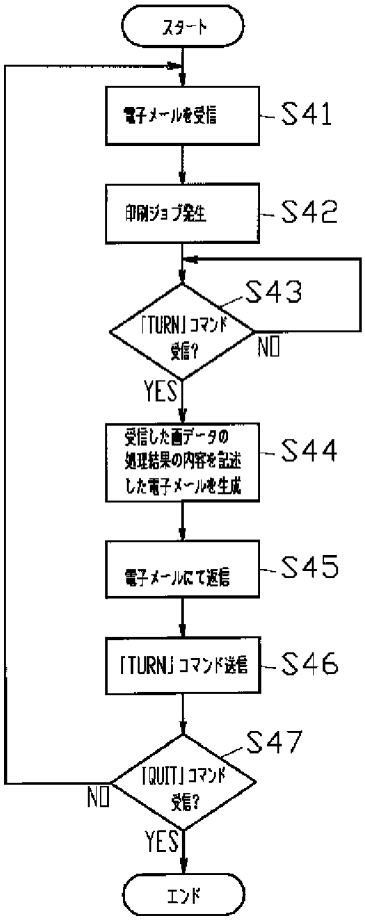


[Drawing 6]

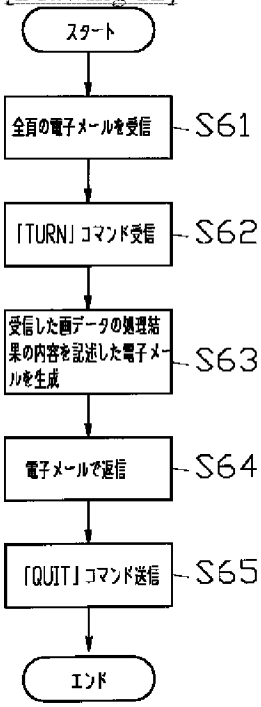
22

短縮番号	相手先名	宛先	属性
001	○○機械	YOU@tmB.NET	SMTPサーバ機能付インターネットファクシミリ装置,中継メールサーバなし
002	○○機械	123@def.co.jp	SMTPサーバ機能付PC,中継メールサーバなし
003	○○機械	456@deg.co.jp	メールクライアント,中継メールサーバあり
004	××商事	ifax2@abc.co.jp	SMTPサーバ機能付インターネットファクシミリ装置,中継メールサーバあり
005	××商事	aaa@abc.co.jp	メールクライアント,中継メールサーバあり

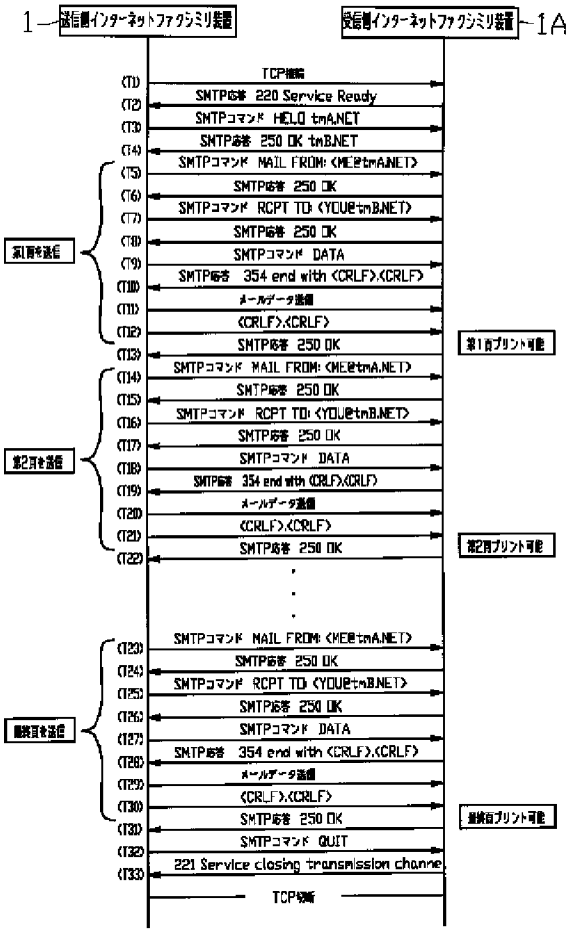
[Drawing 10]



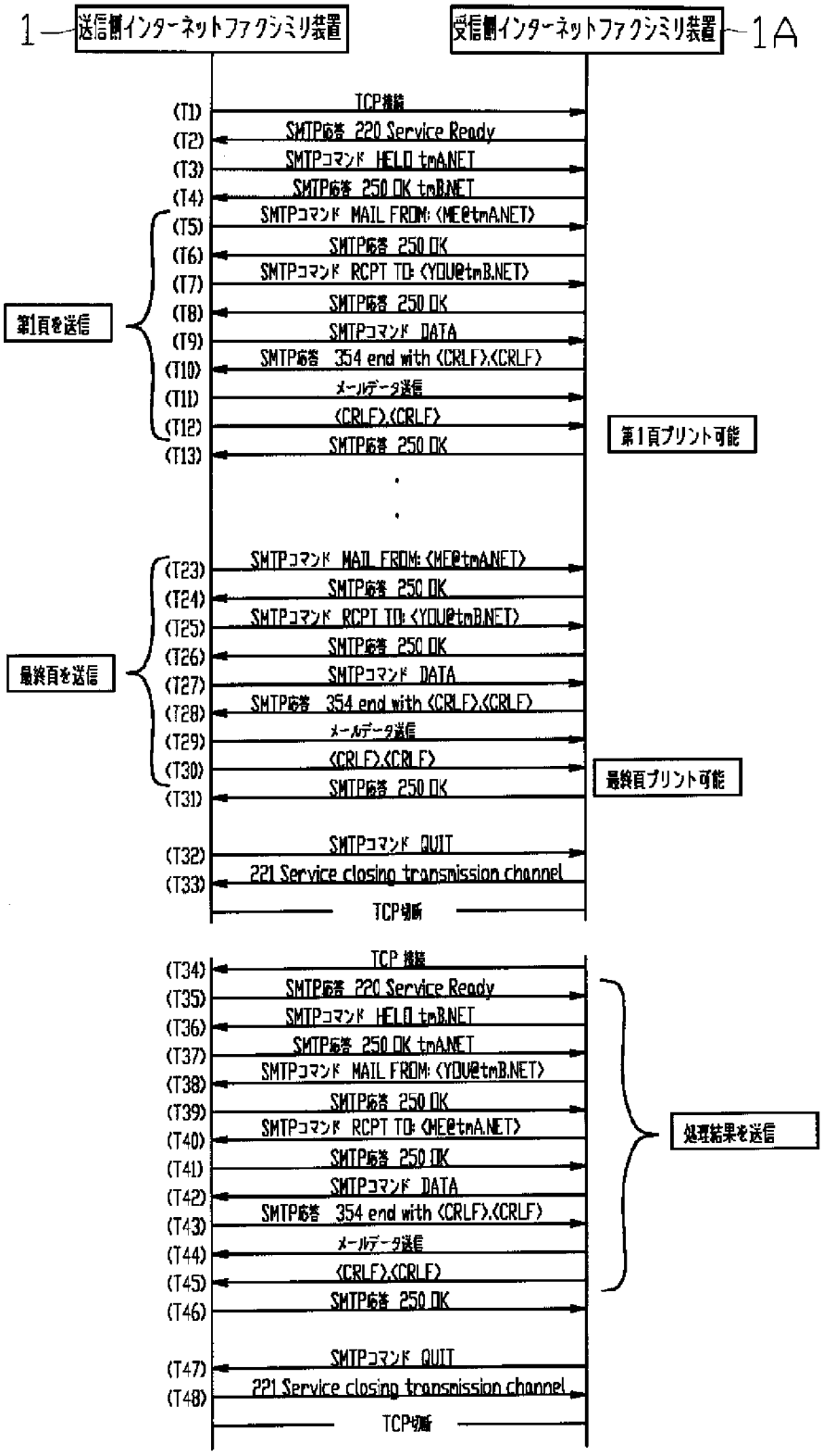
[Drawing 12]



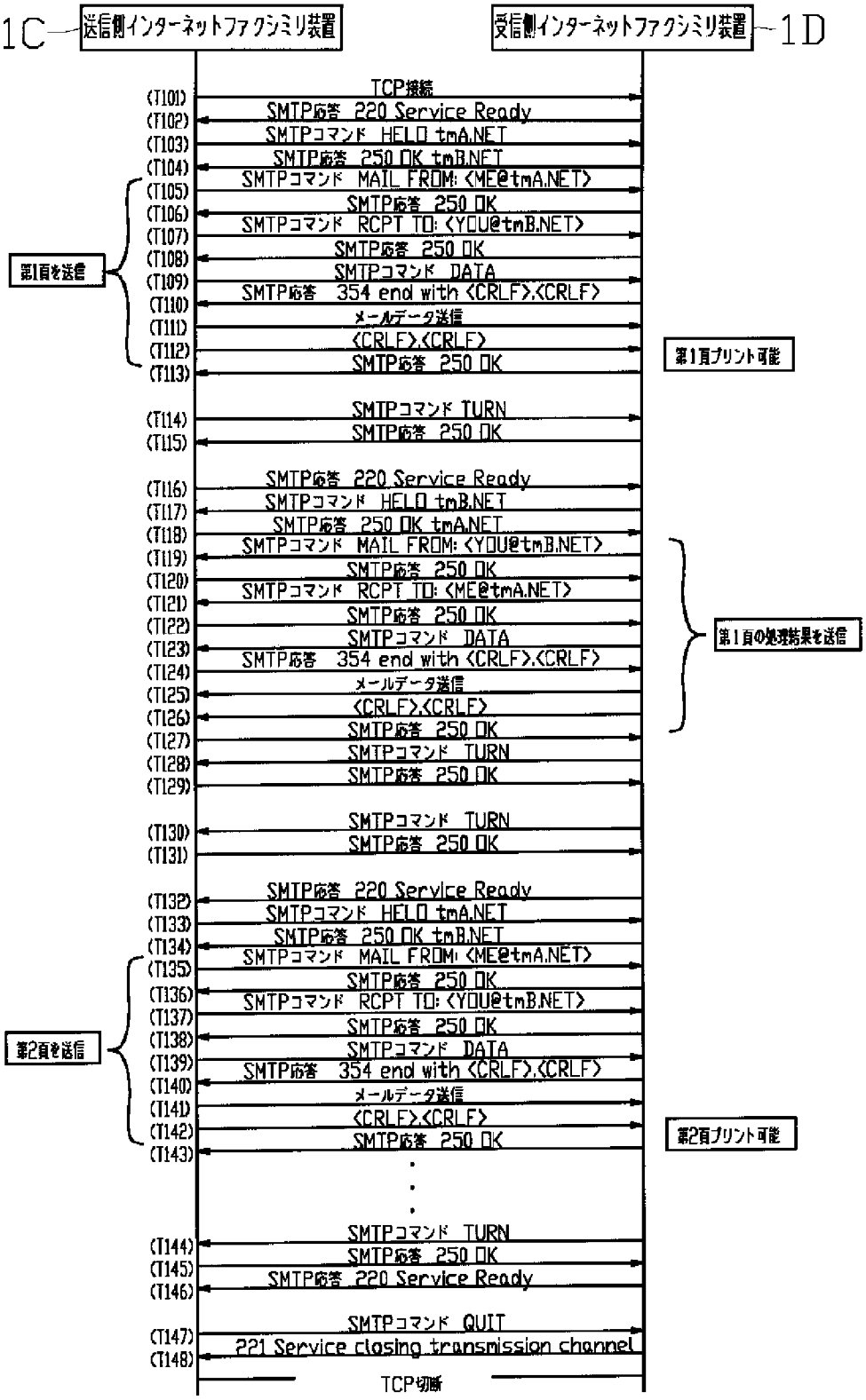
[Drawing 5]


1
送信側インターネットファクシミリ装置
受信側インターネットファクシミリ装置
1A
TCP接続
SMTP応答 220 Service Ready
SMTPコマンド HELO tmA.NET
SMTP応答 250 OK tmB.NET
SMTPコマンド MAIL FROM: <ME@tmA.NET>
SMTP応答 250 OK
SMTPコマンド RCPT TO: <YOU@tmB.NET>
SMTP応答 250 OK
SMTPコマンド DATA
SMTP応答 354 end with <CRLF>.<CRLF>
メールデータ送信
<CRLF>.<CRLF>
SMTP応答 250 OK
第1頁を送信
第1頁プリント可能
SMTPコマンド MAIL FROM: <ME@tmA.NET>
SMTP応答 250 OK
SMTPコマンド RCPT TO: <YOU@tmB.NET>
SMTP応答 250 OK
SMTPコマンド DATA
SMTP応答 354 end with <CRLF>.<CRLF>
メールデータ送信
<CRLF>.<CRLF>
SMTP応答 250 OK
第2頁を送信
第2頁プリント可能
SMTPコマンド MAIL FROM: <ME@tmA.NET>
SMTP応答 250 OK
SMTPコマンド RCPT TO: <YOU@tmB.NET>
SMTP応答 250 OK
SMTPコマンド DATA
SMTP応答 354 end with <CRLF>.<CRLF>
メールデータ送信
<CRLF>.<CRLF>
SMTP応答 250 OK
最終頁を送信
最終頁プリント可能
SMTPコマンド QUIT
221 Service closing transmission channe
TCP切断

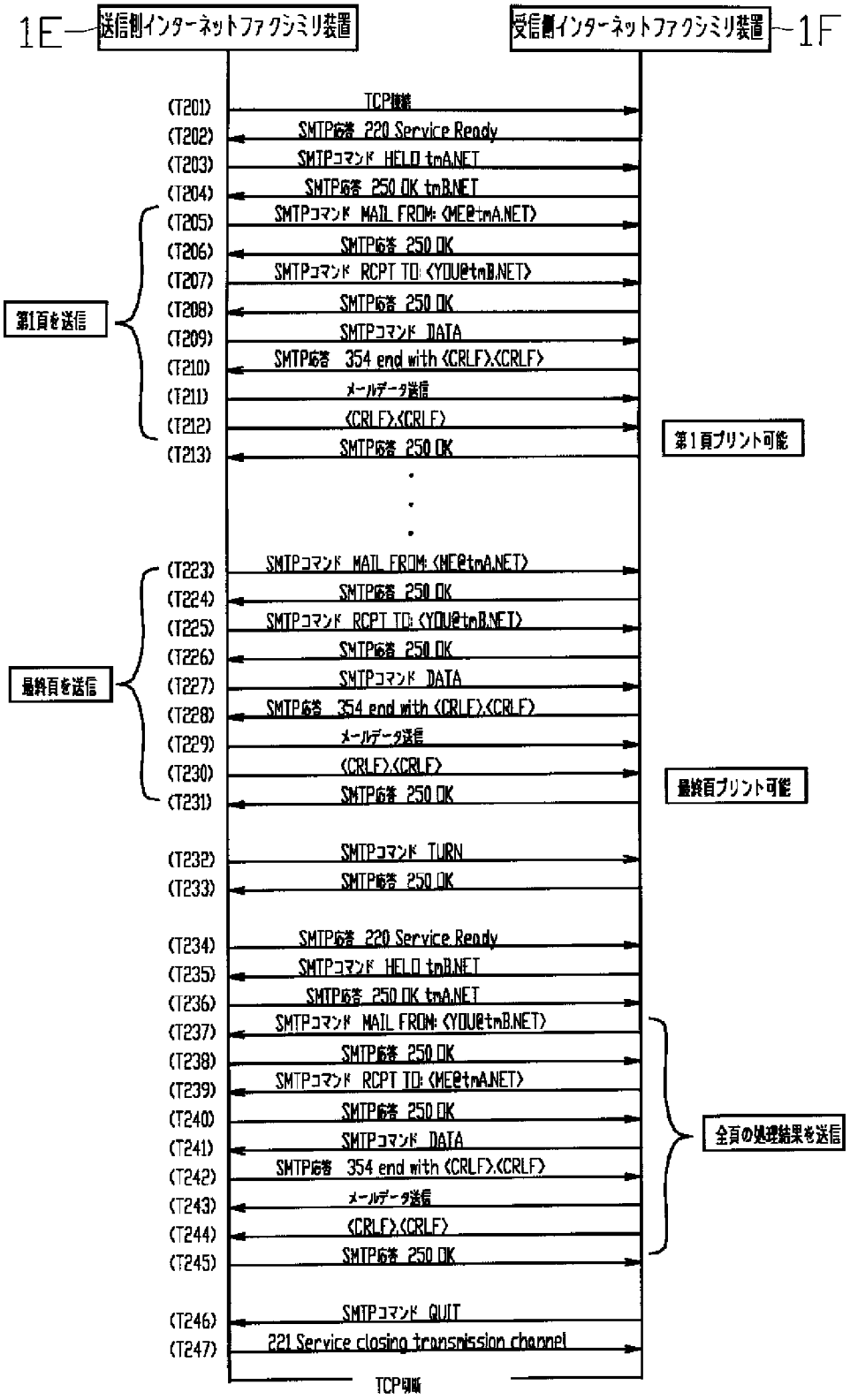
[Drawing 7]


1
送信側インターネットファクシミリ装置
受信側インターネットファクシミリ装置
1A
(T1) TCP接続
(T2) SMTP応答 220 Service Ready
(T3) SMTPコマンド HELO tmA.NET
(T4) SMTP応答 250 OK tmB.NET
(T5) SMTPコマンド MAIL FROM:<ME@tmA.NET>
(T6) SMTP応答 250 OK
(T7) SMTPコマンド RCPT TO:<YOU@tmB.NET>
(T8) SMTP応答 250 OK
(T9) SMTPコマンド DATA
(T10) SMTP応答 354 end with <CRLF>.<CRLF>
(T11) メールデータ送信
(T12) <CRLF>.<CRLF>
(T13) SMTP応答 250 OK
第1頁を送信
第1頁プリント可能
(T23) SMTPコマンド MAIL FROM:<ME@tmA.NET>
(T24) SMTP応答 250 OK
(T25) SMTPコマンド RCPT TO:<YOU@tmB.NET>
(T26) SMTP応答 250 OK
(T27) SMTPコマンド DATA
(T28) SMTP応答 354 end with <CRLF>.<CRLF>
(T29) メールデータ送信
(T30) <CRLF>.<CRLF>
(T31) SMTP応答 250 OK
最終頁を送信
最終頁プリント可能
(T32) SMTPコマンド QUIT
(T33) 221 Service closing transmission channel
TCP切断
(T34) TCP 接続
(T35) SMTP応答 220 Service Ready
(T36) SMTPコマンド HELO tmB.NET
(T37) SMTP応答 250 OK tmA.NET
(T38) SMTPコマンド MAIL FROM:<YOU@tmB.NET>
(T39) SMTP応答 250 OK
(T40) SMTPコマンド RCPT TO:<ME@tmA.NET>
(T41) SMTP応答 250 OK
(T42) SMTPコマンド DATA
(T43) SMTP応答 354 end with <CRLF>.<CRLF>
(T44) メールデータ送信
(T45) <CRLF>.<CRLF>
(T46) SMTP応答 250 OK
処理結果を送信
(T47) SMTPコマンド QUIT
(T48) 221 Service closing transmission channel
TCP切断

[Drawing 9]


1C
送信側インターネットファクシミリ装置
受信側インターネットファクシミリ装置
1D
TCP接続
(T101)
SMTP応答 220 Service Ready
(T102)
SMTPコマンド HELO tmA.NET
(T103)
SMTP応答 250 OK tmB.NET
(T104)
SMTPコマンド MAIL FROM: <ME@tmA.NET>
(T105)
SMTP応答 250 OK
(T106)
SMTPコマンド RCPT TO: <YOU@tmB.NET>
(T107)
SMTP応答 250 OK
(T108)
SMTPコマンド DATA
(T109)
SMTP応答 354 end with <CRLF>.<CRLF>
(T110)
メールデータ送信
(T111)
<CRLF>.<CRLF>
(T112)
SMTP応答 250 OK
(T113)
第1頁を送信
第1頁プリント可能
SMTPコマンド TURN
(T114)
SMTP応答 250 OK
(T115)
SMTP応答 220 Service Ready
(T116)
SMTPコマンド HELO tmB.NET
(T117)
SMTP応答 250 OK tmA.NET
(T118)
SMTPコマンド MAIL FROM: <YOU@tmB.NET>
(T119)
SMTP応答 250 OK
(T120)
SMTPコマンド RCPT TO: <ME@tmA.NET>
(T121)
SMTP応答 250 OK
(T122)
SMTPコマンド DATA
(T123)
SMTP応答 354 end with <CRLF>.<CRLF>
(T124)
メールデータ送信
(T125)
<CRLF>.<CRLF>
(T126)
SMTP応答 250 OK
(T127)
第1頁の処理結果を送信
SMTPコマンド TURN
(T128)
SMTP応答 250 OK
(T129)
SMTPコマンド TURN
(T130)
SMTP応答 250 OK
(T131)
SMTP応答 220 Service Ready
(T132)
SMTPコマンド HELO tmA.NET
(T133)
SMTP応答 250 OK tmB.NET
(T134)
SMTPコマンド MAIL FROM: <ME@tmA.NET>
(T135)
SMTP応答 250 OK
(T136)
SMTPコマンド RCPT TO: <YOU@tmB.NET>
(T137)
SMTP応答 250 OK
(T138)
SMTPコマンド DATA
(T139)
SMTP応答 354 end with <CRLF>.<CRLF>
(T140)
メールデータ送信
(T141)
<CRLF>.<CRLF>
(T142)
SMTP応答 250 OK
(T143)
第2頁を送信
第2頁プリント可能
SMTPコマンド TURN
(T144)
SMTP応答 250 OK
(T145)
SMTP応答 220 Service Ready
(T146)
SMTPコマンド QUIT
(T147)
221 Service closing transmission channel
(T148)
TCP切断

[Drawing 13]



[Translation done.]